The DRILLER

Water for Thirsty Fighters. Using a Bucyrus-Erie transit crane, Seabees rig a steel tank for use in assuring a safe, fresh water supply for thirsty fighters.

—*Official U. S. Navy Photo*

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VOLUME 18 MARCH, 1944 NUMBER 3

U. S. POSTAGE

Make Your
DRILL LAST LONGER
Anything you do to make your drill work smoother, faster, and longer is a real contribution to quicker American Victory — and to better business, too. Here are a few suggestions that may help you:
1. Inspect machine regularly, correc troubles while they're still small.
2. Lubricate according to manufactur recommendations.
3. Keep all parts in good adjustm Watch brakes and clutches especia
4. Keep close watch for frayed and d aged cables.
5. Take care of your engine — don't it idle too long.
6. Keep your machine clean. Sm troubles are easier to detect wh they're not covered by surface c
BUCYRUS ERIE
BUY WAR BONDS!
ARMY E NAVY
BUCYRUS • ERIE CO
South Milwaukee, Wis., Englewood, N. J.
Evansville, Ind.
J. E. Armstrong Sales Company, Waterloo, I

Investigate

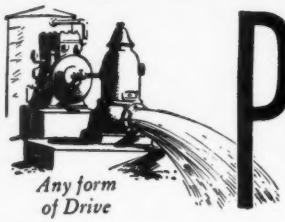
the Peerless way

of

pumping water

—it's different

PEERLESS PUMPS



Any form of Drive

PEERLESS PUMP DIVISION— *Food Machinery Corporation*
301 W. Avenue 26, Los Angeles, 31, Calif. ★ 1250 W. Camden Ave., S. W., Canton, 6, Ohio. OTHER FACTORIES: San Jose 5 and Fresno 16, Calif.

In a Sea of Mud

Drilling in pure muck is anything but a picnic, this driller from the "Alligator" state of Florida, can tell you in graphic terms. It presents some really tough problems which put a strain on even the best in patience.

• When the timbers broke, the drillers were in a real jam. The truck-mounted rig sank into mud over its hub caps, and made ingenuity and not a few good strong backs a requisite.

IF you take the word of W. C. Littleton of Madison, Florida, you'll hesitate before moving your drilling rig into a spot that's really muddy. Take it from him, you're in for a good many headaches—and backaches—if you hit a location like the one he calls the "worst place I ever got into."

His experience with mud occurred a couple of years ago—October, 1941, to be exact—in a place called "Indian Mound Prairie," about ten miles north of Lake City. From Littleton's description, some name like "Muddy Acres" would have been much more appropriate, at least for the time he was there.

Littleton's job was to put in six four-inch wells in an area of about a hundred acres for the purpose of draining off surface water, which was always present in wet weather to make the region a veritable lake. Even in comparatively dry weather the "ground" was pure muck to a depth of from four to six feet, and it was the job of moving the rig around on this type of footing that caused all the trouble. When it takes anywhere from two to 15 hours to move an almost new, truck-mounted Bucyrus-Erie 22-W three hundred yards, it can definitely be classed as trouble.

There was only one way in which the truck and rig could be moved over this terrain with any degree of success and that was the hard way. It involved laying down heavy timbers ahead of the truck, moving the truck on the timbers, pulling up timbers from behind the rig and repeating the process until the desired spot was reached.

While this procedure was slow, it was sure as long as all went well, but sometimes it didn't. Occasionally a timber would fail to hold and truck and rig broke through, sinking into the muck to a depth that posed some tough problems. Here was real trouble, accounting for such nightmares as a three-hundred-yard move in 15 hours. Progress in moving was

impossible until the rig was again safely supported on timbers—a feat which could be accomplished only through patient, strenuous work. It was at times like this that Littleton's headaches were augmented by backaches.

It took from two to five days to complete each of the six wells, so Littleton's experience in mud was extended over a period of more than just a few days. The wells ranged in depth from 80 to 200 feet, and were finished in rock. It hardly needs mentioning that Driller Littleton was more than happy to say "goodbye" to the "Indian Mound Prairie" and its sea of mud when the job was finished.

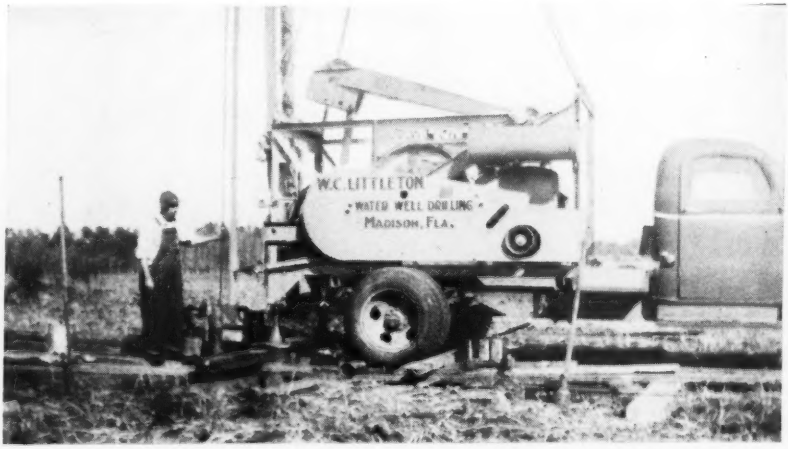
Littleton hasn't encountered a job like this before or since, for which he is grateful. His usual wells are 4-inch farm wells with occasional 3-inchers. The average depth of his wells is about 175 feet. In normal years, he drills about 2500 feet of 4-inch wells and about 1100 feet of 3-inch.

Littleton's territory covers a region which embraces northern Florida and southern Georgia. This means some fairly long hauls—which this driller finds an easy matter with his truck-mounted rig.

The Madison driller confines his activities pretty much to waterwells, having done no blast hole or prospecting work thus far. Drainage holes, but not like those in his "mud hole" experience, haven't been unusual. There are enough wet spots —not muddy and otherwise good farm land impossible to cultivate because of water standing on it—in his territory to make this type of work an appreciable part of his total business. Drainage holes let the surface water run off, leaving fertile land, the value of which Littleton's farmer-customers readily appreciate.

Surface formations in Littleton's territory are principally clay and sand, and occasionally he finds in the sand evidence of surface water as deep as 40 or 50 feet. Littleton always finishes his wells in rock, casing off all formations from surface to rock.

(Continued on page 18)



• Not all of the going was tough. Here the Littleton rig was "high and dry" and drilling hole.

Rural Water Systems
Big Guns Now

FOOD will win the war *and* the peace. As war demands already exceed our present producing capacity, Uncle Sam knows that only by more completely mechanizing our farmsteads can we do the job. He also knows that water under pressure is one of the necessary links to produce enough livestock for our minimum needs. Therefore, he gave the go-sign to industry to supply rural water pressure systems as a primary need to assure enough food for Victory.

Glen Frederick, proprietor of the Electric Motor and Machine Exchange, Battle Creek, Michigan, visualized the possibilities of selling and installing rural water systems nine years ago when he started in business. Since then he's built up his business until he now sells more than 100 water systems each year. Says Mr. Frederick, "More than 75% of all our sales are made to farmers, only the remaining 25% to necessary institutions, such as schools, municipalities, hospitals, etcetera.

"Although we operate primarily as motor repairing and exchanging dealers, rebuilding and servicing these important units for our trade, selling and servicing rural water systems is rapidly taking on increasing proportions," Frederick declares.

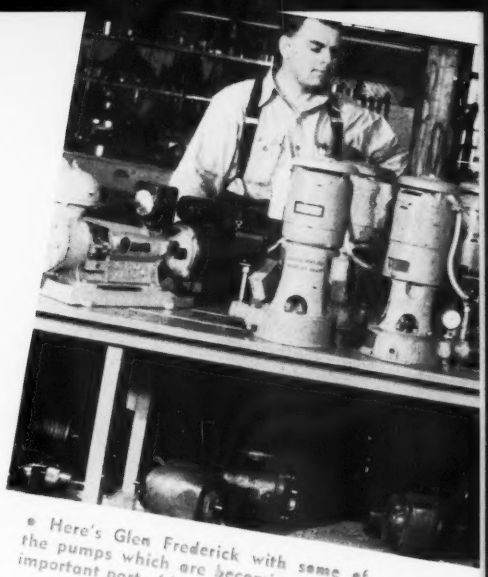
"It was not easy to interest farmers at first," he continues, "but today it is not necessary to solicit orders for rural water pressure systems. First, because we sell only the best units we can get for long service and dependability. In the face of many kinds of competition in many price ranges when we first began selling electric water pumps and other rural plumbing installations, we had to use a lot of salesmanship, and even then, we lost a lot of orders. But time changes all that once you sell enough units that give year in and year out satisfactory service. One sells another, and a good recommendation from a satisfied customer to another prospect, is worth more than a hundred first sales contacts."

The Electric Motor & Machine Exchange aims to carry various sizes in deep well and shallow well units; in normal times this is impossible. But Frederick also rebuilds used units, making them as good as new, and shows seven on hand in the accompanying picture, which he can install on prompt notice from farmers having the necessary ratings.

To further his sales and service on rural water systems, Mr. Frederick has a working agreement with a local well driller, Chas. Wrisley, who has equipment for well drilling, from 2 in. to 12 in. jobs. Frederick says the arrangement is profitable and satis-

Water under pressure relieves acute farm labor shortages — helps produce more food for Victory. A Michigan dealer tells how he sells more than 100 electric water systems per year.

By A. E. Holden



• Here's Glen Frederick with some of the pumps which are becoming a more important part of his business each year.

factory to all concerned—he stocks the parts and units, looks after all sales transactions, and services the installations, while Mr. Wrisley sees to it that an abundant supply of water is available, and makes the installations.

The firm is pushing the sale of the ultra modern type of electric pump, both for shallow and deep wells, in the jet type, combining centrifugal force, suction and pressure, as this type of deep well pump can be installed in the basement, or at any other near-by point, without being placed directly over the well. The average sale to rural homes is about $165, including the installation. Some are higher, others less.

"But this is only the beginning," Frederick declares. "For today's emergency musts, we cannot of course, sell or install the extras which farmers will want and will buy when they are available. Many will disagree with me, no doubt, about the farmer as a good prospect for a complete system. He is slow to adopt new things. He fought against rural electricifications, but now he is fighting for it. He has often resisted the conveniences and the labor-saving features of a modern water system, but once he gets the electric pump installed, with pressure to provide water, pure fresh water to his livestock, he is never satisfied until he has everything as modern as a city home—water in the kitchen, a modern bath, laundry, a water heater, gas or electric, a water softener, a sprinkling system and individual drinking cups for his dairy cows, hogs and poultry."

The reasons are obvious. But for our immediate emergency war needs to produce more food with our dwindling farm labor, let us consider these significant figures taken from typical surveys in farming sections of the Middle West.

First, "Let the water do the running." Carrying water in and out for household purposes alone, means carrying 80 tons of water in, and 80 tons out again each year. Usually in a pail. It makes a total trip of 42 miles lugging water, in a year. This does not include laundry water. Pumping and carrying the total household water supply means the farmer's wife wastes about 125 hours of drudgery work, or 15½ 8-hour days each year. But that is not the worst feature.

Farm folks without water under pressure get along with less water than they need, due to the hours required to pump and carry it. With water under pressure, consumption

(Continued on page 21)

The DRILLER

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What About Postwar Drilling?

MUCH talk about a postwar drilling "boom" has occurred for more than a year, with a large percentage of drilling contractors expressing the belief that such a prosperous period will take place in the water well drilling industry when peace returns. Is the talk just that or is it supported by valid facts?

An analysis of the probabilities of increased activity in the water well drilling industry after the war cannot ignore the status of ground water levels. The trend has generally been one of decline in the last year, especially in industrial areas where pumping has been intense. Such regions as Baltimore and Indianapolis have experienced water level drops alarming in their rapidity and degree.

What are the implications for the water well drilling industry?

Obviously, if ground water levels continue to decline generally, a good many wells will cease to produce water. To be of any value, such wells will have to be deepened. The only other recourse is the drilling of new, deeper wells. In either case, the remedy lies in drilling, whether it's deepening an old well or putting in a new one. This fact alone points to a favorable period for drilling contractors.

Other Factors

Another argument is the fact that many industries, now being served by the water supply systems of the cities in which they are located, would prefer their own wells because of the eventual savings such wells would bring them. Many such industries would contract for deep wells now were it not for restrictions requiring them to continue utilizing available sources of supply. There is little doubt that they will contract for wells when government regulations permit.

The removal of other government restrictions on materials, etc., will also tend to increase the sales of wells. If it is true that many industries would like to have wells drilled now, it is doubly certain that numerous suburban homeowners are of a similar mind.

The resumption of "full speed ahead" in air conditioning should also step up well sales. When the war began, the air conditioning field was still in relative infancy with bright prospects for rapid growth and expansion. A safe assumption is that the wartime halt in air conditioning

(Continued on page 20)

Deming Turbines can take it!

● The Deming Deep Well Turbine Pump illustrated is not only doing an odd job but doing it without protection from extremes of weather in a northern state.

Installed 8 years ago, this pump handles salt water that is run to waste in order to develop a supply of valuable gas suitable for various uses in the owner's plant.

Note the receiver at the left of the pump. When the water in the well is drawn down, the gas is released for storage and use.

In addition to their dependability under extreme conditions, Deming Turbine Pumps are easy to install and service.

If you are not familiar with the complete line of Deming Deep Well Turbine Pumps, illustrated information will be sent to you upon request.

DEMING

THE COMPLETE LINE

PUMPS AND WATER SYSTEMS

The Deming Company · Salem, Ohio

NEWS OF THE MONTH

P-148 Now Governs Well Materials

MATERIALS for rural and suburban water wells may now be obtained under order P-148 which governs such wells, the War Production Board announced recently. Form WPB-617 (formerly PD-200) or other appropriate forms must be filed to obtain materials for other than rural and suburban wells. The War Production Board made this announcement in revoking direction No. 12 to CMP regulation No. 1, which formerly governed distribution of materials for this purpose.

Under the direction, water well drillers were allowed to file form CMP-4B for the controlled materials in their business. Inasmuch as this is no longer a necessary procedure, the direction has been revoked, WPB explained.

New Guide To Wage-Hour Rules

A COMPREHENSIVE guide to wage and hour regulations is provided by the *1943 Wage and Hour Manual*, published by the Bureau of National Affairs, Inc. Included in the volume's 700 pages are more than 1,000 rulings and interpretations relating to wages, salaries, and hours of work. The book is indexed for convenient reference.

Following the general style of earlier editions, the 1943 Manual is divided into four parts. Part I includes all changes made since March, 1942, in controls under the Fair Labor Standards Act. Parts II and III contain similar material under the Public Contracts Act and a group of miscellaneous Federal statutes relating to wages and hours. Part IV contains the text of all statutary and regulatory material, as well as articles on wage and salary stabilization, premium pay regulation, and the minimum wartime work week.

Printed on paper of a different color at the end of the Manual, is a complete topical index to all regulations, articles, and interpretations.

The volume is obtainable from the Bureau of National Affairs, Inc., Washington, D. C., at a cost of $7.50.

Indiana Meeting

THE fourteenth annual convention of the Indiana Well Drilling Contractors Association will be held at the Spencer Hotel in Indianapolis, Thursday and Friday, March 23 and 24, according to E. H. Merritt, secretary. Details have not yet been arranged but President H. R. Lamb advises that any Indiana drillers who miss the convention will "really miss something."

Wire Rope Catalog

MACWHITE COMPANY of Kenosha, Wisconsin, has recently issued catalog G-15, giving list prices, tables, data, and helpful information on wire rope.

For handy reference, this pocket-size catalog is indexed and tabbed. In addition to information on the various Macwhyte wire rope products, the illustrated catalog gives maintenance and seizing hints.

Hydraulic Puller

THE Simplex Jenny Center Hole Hydraulic Puller was recently announced by Templeton, Kenly & Co., Chicago. Applications of the unit include pulling bushings, cylinder liners, bearings, pistons, wrist pins, valve seats, keys, wheels, sprockets, gears, boiler tubes, and pipes. It is also used to pull structural members together for welding or riveting.

Bulletin No. 43J, describing the Simplex Jenny Hydraulic Puller, has just been published by Templeton, Kenly & Co., may be obtained by writing that company at Chicago.

Meyers Publishes Annual Calendar

SHOWING the entire wartime line of F. E. Myers and Bro. Company equipment, the 1944 edition of the annual Myers poster-calendar is now off the press. New features are a change in format, grouping of products for quick location and identification, and utilization of the back of the calendar.

The change in appearance marks a departure from the style maintained for 54 years, the Myers company reports. The lower half of the reverse side of the calendar gives cross section illustrations of all types of Myers water systems.

There are two editions — one covering the complete line of Myers pumps, water systems, hand and power sprayers, and hay unloading tools. The other edition covers pumping equipment only.

Copies of the calendar may be obtained — while the limited supply lasts — from the F. E. Myers and Bro. Company of Ashland, Ohio.

PROFITABLE SHALLOW DRILLING WITH . . .

Yes, profitable shallow drilling, because with "Hi-Lastic" you carry tools higher, make a longer stroke, drill more holes faster. "Hi-Lastic" helps reduce the tendency for the bit to channel and for the hole to get out of round. Internally lubricated, requiring no manila cracker.

For profitable deep well drilling try Macwhyte Standard Tool Line. Has the right elasticity for long, hard, sharp blows.

Bail fast with the help of Macwhyte Sand Lines. Made in coarse laid (6 x 7) and soft laid (6 x 19) . . . in mild plow steel.

Get the CORRECT line for your equipment from

NO. 721

MACWHYTE COMPANY

2939 Fourteenth Avenue, Kenosha, Wisconsin

The Driller & The Law

Time Limits In Drilling Contracts

TO GUARD against unpleasant controversy with the owner and against possible litigation, a drilling contractor should complete a well drilling job without unnecessary delay. If the contract specifies a time limit, the utmost effort to comply with that condition should be used. Even if there is in the agreement—as there should be—a clause to the effect that the contractor is not to be responsible for delays arising from causes beyond his control, he should remember that "beyond his *control*" implies a cause that is *unavoidable* so far as he is concerned.

Where no time limit is set by agreement, the Law implies that the job will be completed within a reasonable time. And, of course, some contracts specify that the work is to be done by a certain date, or within a reasonable time thereafter. Here, again, this does not mean that the driller can drill the well when he "gets good and ready," or at his own convenience.

What Is "Reasonable" Time?

What constitutes a reasonable time is obviously a difficult matter to determine—incapable of precise definition. It depends on particular circumstances. Therefore, if the driller would avoid the risk of getting into a dispute that might wind up in the courts, he will not let any "grass grow under his feet" before he has completed a job.

In this connection, there is at least one appellate court decision that deserves study, because it throws light on just what constitutes a reasonable time for drilling a well. The decision was rendered by the Texas Court of Appeals at El Paso in the case of Adams vs. Chadwick, 140 S.W. 2d, 524. That controversy involved agreement by the lessors of grazing land to drill a well for the benefit of the lessee, but much that was said by the court would apply with equal force to the driller's contract.

Sue for Damages

The lessee sued the lessors for damages, claiming that delay in bringing in the well necessitated a disadvantageous sale of livestock and abandonment of the ranch. That five months after the agreement was made, a successful well had not been drilled showed failure to drill it within a reasonable time. Because the contract fixed no time for completion of the well the lessor's obligation was to complete within a reasonable time. The court was faced with the question of whether failure to drill a successful well within five months did or did not constitute failure to drill within a reasonable time.

The lease was dated October 5, 1938. Shortly thereafter, a dry 500-foot well was drilled. Another well, started December 15, failed to produce water. March 8 the lessors notified the lessee that water had been obtained in another well, which, however, was not located in conformity to terms of the lease. These facts accounted for the delay.

Deciding that there was no showing of failure to produce a well

(Continued on page 21)

LITTLE AND BIG STORIES BEHIND COOK INSTALLATIONS

The name "HEINZ" connotes purity in foods, wholesome working conditions in manufacture, honesty in merchandising. The name "HEINZ" has social potency as well as economic power. A name to conjure with.

H. J. HEINZ COMPANY, Pittsburgh, Pa.

A COOK Deep-Well Turbine contributes to the vast quantities of water that is required in the processing of the "HEINZ 57" varieties.

DEEP-WELL COOK PUMPS

A. D. COOK, Inc.
Outfitters for Wells
LAWRENCEBURG, INDIANA

GENUINE COOK WELL SUPPLIES

FROM THE MAILBAG

This page is open to any of our readers having questions to ask relating to drilling, driving pipe, dressing bits, etc. All letters will be answered promptly by experienced drillers and engineers who are qualified to give intelligent advice on these subjects. We will publish as many letters of general interest as space will permit. Address: The Driller, South Milwaukee, Wis.

Sirs:

Will you please write me your opinion on how long it would take to break in a new man to operate a well drill rig and service and install pumps?

The man is to be capable of almost all problems of a driller such as setting screens, tool dressing, fishing and so on.

E. A. Mich.

This is a difficult question to answer because it depends upon the capabilities of the man. For an inexperienced man who is not at all familiar with this type of work to become efficient in all phases of water well drilling, driving pipe, installation of pumps, setting screws, servicing, bit dressing, fishing, etc., it would ordinarily require many years, as you know each job differs in some respect and there are innumerable unforeseen conditions arising which can be mastered and handled only after many years of experience.

In other words, drilling wells is a specialized business and it is impossible to take an inexperienced man and make a capable, full-fledged driller out of him in a few weeks' time. He can learn the more important fundamentals in a short time by reading books and pamphlets on the subject, but it requires years of hard, painstaking effort to become efficient in all phases of drilling and in our opinion this can only be accomplished with the greatest degree of success by practical experience.

The best drillers are those who have learned the business the hard, practical way—from the ground up, starting in as a helper, working with an experienced man, and gradually mastering each operation. This may take two or three years or as many as ten years or more, depending on the ability and initiative of the man himself. A great responsibility rests upon the driller of water wells and he must be adequately trained and competent to construct wells in the proper manner to avoid serious consequences. One badly constructed well may endanger the lives of a whole community.

Summing it all up, a well driller strictly speaking gets paid not so much for what he does as for what he knows. You, therefore, can't expect to make a competent driller out of an inexperienced man in a few month's times so that he can expertly handle every job and have the confidence of the public, any more than a young medical student can expect to become a good physician or surgeon without years of study and training under medical experts.

Sirs:

We drilled 28 feet in clay, then in a narrow layer of small sand and gravel, and then in rock. Water came in very strong shortly after we struck rock, coming up on both the inside and outside of the casing. We tasted the water and found that it was salt water. Then we drilled deeper — to a depth of 82 feet — and test pumped for 11 hours. It was still salt water. Can you advise me as to whether anything can be done to shut off this salt water?

E. A. C. Canada.

It is difficult to offer suggestions in this instance as you failed to state the diameter of the hole drilled and

the diameter of the casing. It would doubtless be possible to shut off the salt water by sealing the casings by cementing if there is sufficient difference in diameters of hole drilled and O.D. of casing. For instance 6″ pipe may be cemented in 8″ hole and 4″ pipe may be cemented in 6″ hole.

In handling such a cementing job, pipe should be pulled back about 2′ from bottom and cement poured inside the liner from the top. A mixture of clay mud should be poured on top of the cement to force it down the inside of the casing and up around the outside so as to completely fill the annual space.

After the cement has set, the clay mud mixture may be bailed out and any plug remaining in the bottom of the casing can be drilled out. If the cementing job is successful, the hole should be dry except for water which enters from the wall of the open hole below the casing.

Proper preparation of the grout mixture is of utmost importance. Best results are obtained by the use of neat cement and water in the ratio of one bag (cubic foot) of fresh cement (free from lumps) to 4½ to 5 gallons of clean, drinkable water or if necessary up to 5½ gallons are permissible. It is important that the grout material be placed in one continuous mass from the bottom of the annular space to be grouted upward.

During March the American Red Cross will raise its 1944 War Fund. A goal of $200,000,000 has been set. This must be met if the Red Cross is to continue its work on an undiminished scale. Let's give!

Disaster relief units equipped with mobile first aid facilities and canteens are on the alert at strategic points to aid the victims of fire, flood or accident. Help the Red Cross!

Ding Dong Bell! What's That Smell?

A STRIPED pussy in a farmer's well posed the most unusual problem in the 19-year life of General Electric's Farm Forum. Said the letter requesting aid:

"A skunk got in my well. Although I have emptied the well fifteen times and cleaned it, the water still is not palatable. Is there any remedy?"

Farm Adviser Ed. W. Mitchell replied with a chuckle:

"Sprinkle a can or two of chloride of lime and four ounces of potassium permanganate into the well. After three or four days, pump the well dry three or four times — or till the taste of the chlorine is almost gone —and then hang a burlap bag of charcoal in the well. That should do the job; if not, repeat the operation."

As a consoling afterthought Mr. Mitchell added:

"It is hard luck for you, but remember that it was a fatal accident for the skunk."

—from *General Electric News Digest*

WIT BITS

Helen: "Did Nellie reject Johnnie when he proposed?"

Mildred: "No; she put him in Class 5—to be drawn on only as a last resort."

Son: Hey, pop, what is a millennium?

Pop: Same as a centennial, but with more legs.

"I would like to see the Judge, please."

"Sorry, sir, but he is at dinner."

"But this is important."

"Can't be helped, sir. His Honor is at steak."

Did you succeed in rescuing your friend who was captured by the cannibals?

Unfortunately, when I arrived he had already been scratched off the menu.

Shortly after two o'clock on a bitter cold morning a physician drove four miles in answer to a telephone call. On his arrival, the man who had summoned him said, "Doctor, I ain't in any particular pain, but somehow or other I've got a feeling that death is nigh."

The doctor silently felt the man's pulse and listened to his heart. "Uh, huh," he grunted, "have you made your will?"

The man turned pale. "Why, no, doctor, at my age—oh, doc, it ain't true, is it? It can't be true!"

"Who is your lawyer?"

"Higgenbotham!"

"Well, you had better send for him at once."

The patient, now white and trembling, went to the telephone and summoned the lawyer.

"Who's your pastor?" continued the doctor.

"The Rev. Kellogg Brown," mumbled the patient, trembling. "But, doctor, surely you don't think. . . ."

"Send for the minister at once. Your father, too, should be called; also anyone else. . . ."

"Oh, doctor, this is terrible! Do you really think I'm nearing the end?" The man began to blubber softly.

The doctor looked at him with steely eyes. "No, of course not. There's not a solitary thing the matter with you. But I'd hate to be the only man you've made a fool of on a night like this."

Luke: My oldest son doesn't want to marry.

McGluke: Don't worry. Just wait till the wrong girl comes along.

A man ran into the barber shop, grabbed a customer by the arm and yelled in his lathered ear: "Hey, McPherson, your house is on fire." The customer jumped from the chair and without waiting to remove the towel from his neck or the soap from his face, dashed out the door and ran full speed down the street. After going a couple of blocks he pulled up suddenly and muttered: "What the heck am I running for—I'm not McPherson."

Beautiful thought inspired by the sight of a little brown thrush perched on our window sill: "Lucky bird! You have only one bill to take care of!"

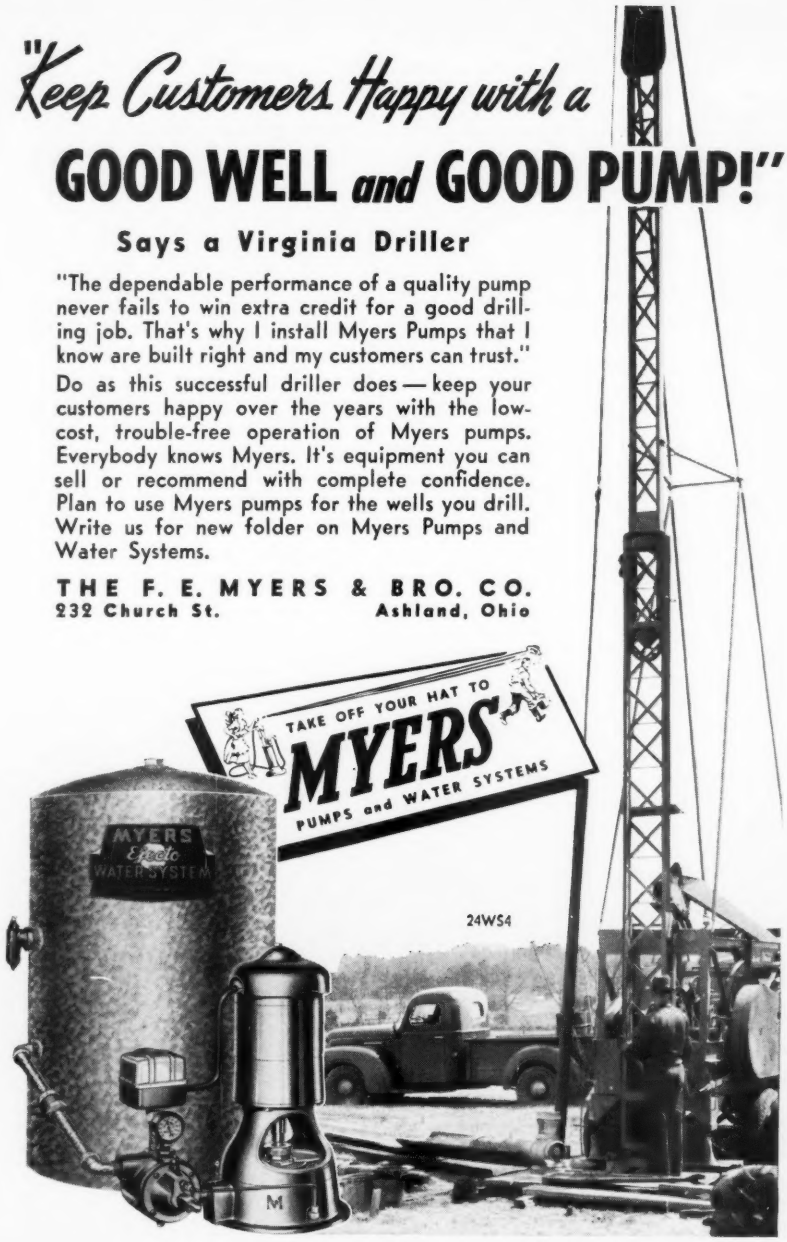
"Keep Customers Happy with a GOOD WELL *and* GOOD PUMP!"

Says a Virginia Driller

"The dependable performance of a quality pump never fails to win extra credit for a good drilling job. That's why I install Myers Pumps that I know are built right and my customers can trust."

Do as this successful driller does — keep your customers happy over the years with the low-cost, trouble-free operation of Myers pumps. Everybody knows Myers. It's equipment you can sell or recommend with complete confidence. Plan to use Myers pumps for the wells you drill. Write us for new folder on Myers Pumps and Water Systems.

THE F. E. MYERS & BRO. CO.
232 Church St. Ashland, Ohio



You'll get **MORE FOOTAGE**
per day when you use
ANDREWS STEEL

The ability of drilling tools, forged from ANDREWS Steel, to take punishment and give unfailing service under the most severe conditions of wear and abuse, is the result of Andrews' years of experience in the production of special high grade steels, modern equipment and exact metallurgical control over every step in production from the selection of raw materials to the finished billet. When your drilling tools are forged from ANDREWS Steel you enjoy the profitable advantage of reduced footage costs and other time, labor and money-saving economies. Write for detailed specifications and data on ANDREWS Well Bit and other Steels for the drilling industry.

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NEWPORT KENTUCKY
DIVISIONS
THE NEWPORT ROLLING MILL COMPANY
THE GLOBE IRON ROOFING & CORRUGATING CO.

Sea of Mud . . .

(Continued from page 5)

"My best advertising," says Littleton, "is through satisfied customers. I always try to do a good job and to treat my customers honestly and fairly. It works, too, because I always have more than I can get to." His formal advertising is confined to business letterheads and to bold, easily-read lettering on his rig.

His machine is a Bucyrus-Erie 22-W, and he keeps it in almost constant operation, with little time off between jobs. He does much of the actual operating himself, but has one helper to assist him and relieve him when that's advisable.

Most of his wells, he's happy to tell you, go down without trouble. He spots his rig, makes hole fast, brings in the water, and is soon on his way to the next job. This kind of drilling is profitable, and Littleton, who has been drilling for 29 years, works carefully to keep his work on the profit side of the ledger.

Of course, not being a miracle-worker, he too has occasional fishing jobs. He usually brings these to a successful conclusion, in spite of the fact that he tells of one instance in which the story went the other way—his tools got stuck and stayed stuck despite various fishing attempts.

It happened on a farm well north of Monticello, Florida, in February of 1939. While Littleton lists the "mud hole" as the worst place he ever got into, this job comes under his category of "about as bad a job as I ever encountered."

The well was a four-incher drilled through clay and sand to a depth of 120 feet where he hit rock. Drilling in the rock soon revealed that it was crumbly and had a tendency to cave. After having drilled only a

short distance, Littleton began to pull his tool string, intending to run in a bailer in order to take out any chips and cuttings. The plan was o.k.—but it didn't work, for the tools wouldn't pull. Repeated jerking and jarring didn't improve the situation, for the tools stayed tight in the hole.

This seemed to call for the use of a bumper, so Littleton used one, jarring on the rope socket and again trying to pull. Results? None—the tools wouldn't budge. Next he drilled a two-inch hole with drill rods beside the four-inch hole to a depth just below the four-inch bit. Certain that he would free the bit, he confidently tried pulling a third time—but still no success.

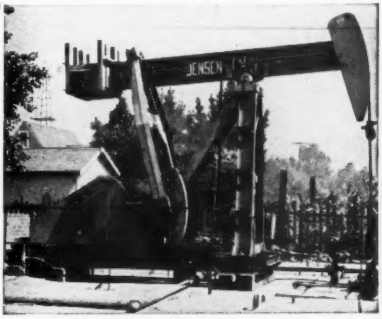
What to do about it? The tools wouldn't pull, the jars wouldn't jar, and things generally defied solution. Littleton wasn't licked yet, though. He decided to drill that two-inch

• Littleton called this rig his "man-killer"—and it was abandoned a long time ago for an easy handling Bucyrus-Erie 22-W.

Who Uses JENSEN Pumping Units?

One reason for the widespread use of JENSEN Water Well Pumping Units is the fact that so many drillers recommend them for economy and dependability. Among our many enthusiastic customers are:

- Cities
- Airports
- Ranches
- Irrigation Farms
- Dairy Farms
- Vegetable Farms
- Mines
- National Parks
- Lumber Camps
- Factories
- Railroads
- Chemical Plants
- Power Companies
- Gas Companies



Write for Bulletin No. 26

JENSEN BROS. MFG. CO.

14th and Pacific Streets, COFFEYVILLE, KANSAS, U. S. A.

EXPORT OFFICE: 50 CHURCH ST., NEW YORK CITY, NEW YORK

Monitor is answering the call for new windmills to keep farm wells pumping!

Increased manufacture of new Monitor windmills has been officially authorized. This is the regular Monitor "storm-safe" mill with automatic wind governing — constant pumping speed automatically regulated in varying wind velocity.

This is the windmill with Tobin Bronze Bearings and Ball-Bearing Turntable, sensitive to a leaf-stirring breeze. Special V-brake and Automatic Wind Governor keeps it under control in high winds.

If a farmer's need of a new windmill is genuine, he should apply for ration certificate MR-22. Regulation towers and windmill repairs have also been authorized to keep old windmills in service wherever possible. Write or wire your nearest Baker branch.

Monitor

WINDMILLS
PUMPS
PUMPJACKS
WELL SUPPLIES

• BRANCHES •
BAKER MFG. CO.: Minneapolis, Minn.; Madison, Wis.; Fort Dodge, Ia.; Cedar Rapids, Ia.; Omaha, Neb.; Kansas City, Mo.; Enid, Okla.; Hutchinson, Kansas
BAKER MFG. LTD., Winnipeg, Canada
AXTELL CO.: Fort Worth, Tex.; Amarillo, Tex.; Lubbock, Tex.; San Angelo, Tex.

BAKER MANUFACTURING CO., EVANSVILLE, WIS.

hole bigger, using a 4-inch bit and a 14-foot stem, with a set of 6-inch jars. The hole went down fine, and soon reached the depth at which the other tools were stuck. So Littleton hauled up his tools, put on a slip socket, and let that down, thinking he might catch the rope socket on the stuck tools. Still no success.

The next attempt involved shooting with dynamite. Taking 12 sticks and placing them on a 1 x 1 strip about 30 feet long, he let the strip into the hole beside the drill stem and jars and set it off. Running his slip socket down again, Littleton was hopeful until he found that he apparently couldn't touch the tools at all.

That was enough for him; he gave up on the tools and instead put his mind to making the well. Determined to turn that old hole into a well somehow, he drilled on down, casing off past the spot where the tools were stuck. In fact, he drilled to 220 feet and got a fine well which produced 10 gpm under test with a 2½-inch deep well cylinder.

You can bet that he's glad that jobs of this type are only rare exceptions and that most of his work goes according to plan—smoothly.

Drilling . . .

(Continued from page 8)

will be only temporary—that the industry will again develop phenomenally when hostilities cease.

It appears, then, that the anticipated drilling boom is more than just talk, for there are inescapable arguments which lend it substantial support. And that poses another important question: What are *you* doing by way of planning to prepare your business for the demands of the postwar period?

Water Systems . . .

(Continued from page 7)

increases from about 6 gallons per day per person to 25 gallons per day, or about 100 gallons per day for the average family of 4 people.

Under today's war needs, add more wasted labor trying to pump fresh water for livestock, amounting to 400 or 500 gallons per day. The average farm today cares for 20 dairy cows, 2 horses, 50 hogs, 100 sheep and 500 chickens. These figures may vary up and down, but are average. The milch cows will need and should have 240 gallons, the horses 20 gallons, the hogs 100 gallons, the sheep 100 gallons, the poultry 50 gallons, or a total of 510 gallons per day.

Whereas a medium size electric water pump will furnish fresh water as needed, automatically, to the animals in a single hour for about 3c a day, the same amount would use 4.20 hours a day, or actually waste 15,330 hours per year doing it by hand. In terms of 8-hour days, the waste amounts to the unbelievable sum of 191 8-hour days to pump and carry water to the average livestock herds on Mid-Western farms.

With these figures it is not difficult to convince any farmer that a water under pressure system for livestock alone, permissible under today's emergency rulings, will pay for itself in a year or less. But, most important as Uncle Sam knows, such systems will go far in solving the farm labor problem, so vital now for Victory and a lasting Peace.

In summation, Mr. Frederick says that a single farm installation which starts off with an average of $165, will eventually reach an average sale of between $350 and $500 per farm home for a completely modern water system. Besides, there will be service work to be done. There will be additions, and replacements. It is a virgin market, and a big one. Mr. Frederick believes that the plumber and water supply dealer who pioneer rural water systems will have a large and growing business that will be profitable.

Driller and Law . . .

(Continued from page 12)

within a reasonable time, as of March 8, the Court of Civil Appeals said:

"There is no evidence of any complaint as to lack of diligence on the part of defendants in drilling the well; the evidence likewise fails to show that it was not the part of prudence to abandon the first two wells in question and seek to develop water in another place; there is no evidence as to what depth it was necessary to go to demonstrate whether water could be produced:

BETTER WATER SUPPLY
THE "AURORA WAY"
DEEP WELL
The complete line of Aurora Centrifugal and Apco Turbine-Type pumps — the product of experience — enables you to meet every water supply problem for Municipalities • Industries • Farms • Homes • Estates • Institutions . . . with Lasting Efficiency, Dependability and Economy for Deep or Shallow Wells.
SHALLOW WELL
BUY WAR BONDS
Write for CONDENSED CATALOG M
Distributors in Principal Cities
AURORA Always PUMPS
AURORA PUMP COMPANY
58 Loucks St., Aurora, Illinois

BARGAIN COUNTER

To the reader who wishes to advertise used equipment in "Bargain Counter" Section. All advertising in this section is payable in advance. Enclose your check or money order with copy. Rate: 30c per line. Minimum charge $1.20. No discounts; no commissions. Read these instructions carefully. The average line contains 28 characters (20 characters if all capital letters are used). Count spaces and punctuation as one character each. Allow 10 characters for box number if blind advertisement is desired. Count your own copy to save delay. Holding up your advertisement one month to secure approval of revised copy or an additional remittance, may cost you real money in a lost sale. Be sure to enclose the correct amount of money with your order. Closing date—10th of preceding month. Example—January issue closes December 10th.

To the reader wishing to answer "Bargain Counter" Section advertisements appearing on these pages: Be sure to address your inquiry to the advertiser by using the correct box number. Mail your letter in care of THE DRILLER, South Milwaukee, Wisconsin. Write each advertiser a separate letter. Do not write us for name and address of advertiser. This information will not be given out. We have no information about the equipment advertised other than that shown in the advertisements themselves.

DRILLS

24-L Bucyrus-Erie Spudder, 6-cyl. Buda motor, swabbing gears, Kohler light plant, dog house, tools, etc. Price $5000.00. Purchased new and used one year. Stored in shed. Owner in U. S. Air Corps. Box 0503

Keystone 3½ traction machine. Hercules 4-cyl. motor just newly rebuilt. 400' each ¾ drill cable and ⅜ sand line. Machine in good running order. $500. Edward Hoyt, Roxbury Center, Conn.

MISC.

FOR SALE

Turbine pump, 11 stage for 6" hole, capacity 50 G.P.M. with 3 phase 3 H.P. 220/440 volt motor. 50' of shafting and column pipe, water lubricated. Used only a few months. Pabst Dairy, Oconomowoc, Wis.

FOR SALE

Turbine pump, 300 GPM, 300 ft. setting for 8" hole, 14 stage bowls, water lubricated, 40 HP hollow shaft motor, 3/60/220/440 volt, 1750 RPM. Pump used only 30 days. Starting equipment and switches included. Pump in southern Wisconsin. Box 0551

FOR SALE

MODEL 3930 Johnson Right Angle Gear Drive Speed Increasing Ratio 2:1 with Watson-Spicer WL-37 (36" Long) Flexible Drive Shaft with 1½" Flange. Like new—used 48 hours. Box 0493

WANTED

Bucyrus-Erie 22 or 24-W, Keystone 50 or 70, or Star 71, truck mtd., with or without tools. State price and age of machine. Box 0473

HELP WANTED

Solid tool well driller. Steady work guaranteed. Box 0483

Experienced cable tool drillers for drilling water wells and test holes. Steady work, good wages. Box 0513

Drillers to work for an established concern in central Virginia. Continuous employment. Good wages. 60-hour week. Modern equipment. Box 4311

POSITIONS WANTED

Driller with 15 yrs. experience in gas, water and oil drilling—some rotary—age 38. Best references. Desires employment; prefers foreign assignment. Box 0523

it is not disclosed as to the length of time requisite to drill a water well in the area in question; there is no evidence from which it can be reasonably inferred that the operations of defendants were not continuously, skillfully, and diligently prosecuted. We do not believe, from the mere fact a producing water well was not drilled before March 6, it can be reasonably deducted that defendants breached their covenant."

The court's decision does not mean that in every case five months' delay in drilling and equipping a well is excusable. The court merely says that, considering the efforts made in this particular case and other pertinent circumstances, no unreasonable delay was proved.

—A. L. H. Street

The fight on the doorstep

THIS WAR can't be won on battlefields alone. One of the most critical campaigns of all must be waged right on the doorstep of every family in America.

This is the fight against higher prices and higher wages. It's a fight that *must* be won . . . or victories on battlefields will be meaningless.

Your part in this fight won't be easy. It will mean foregoing luxuries, perhaps doing without a few necessities. Tough? Maybe . . . but don't say that where the veterans of Italy and New Britain can hear you!

You *want* to do your part, of course. So do we all . . . farmers, laborers, white-collar workers, business executives. And the way to do your part *right* now is to observe the following seven rules for Victory and a prosperous peace . . .

1. Buy only what you NEED. And before you buy anything, remember that patriotic little jingle: "Use it up. Wear it out. Make it do or do without."

2. Keep your OWN prices DOWN! If you sell goods, or your own time and labor, *don't ask for more money* than you absolutely must! No matter who tries to talk you into asking more . . . *don't listen!*

3. No matter how badly you need something . . . *never pay more than the posted ceiling price!* Don't buy rationed goods without giving up the required coupons.

4. Pay your taxes cheerfully! Taxes are the cheapest way to pay for a war! The MORE taxes you pay now—when you have some extra money—the LESS taxes you'll pay later on!

5. Pay off old debts. Don't make any new ones! Get, *and stay,* square with the world!

6. Start a savings account. Make regular deposits, often! Buy life insurance. Keep your premiums paid up.

7. Buy War Bonds . . . regularly and often! *And hold on to them!* Invest every dime and dollar you don't actually NEED . . . even if it *hurts* to give those dimes and dollars up!

Use it up . . . Wear it out.
Make it do . . . Or do without.

A United States War message prepared by the War Advertising Council; approved by the Office of War Information; and contributed by the Magazine Publishers of America.

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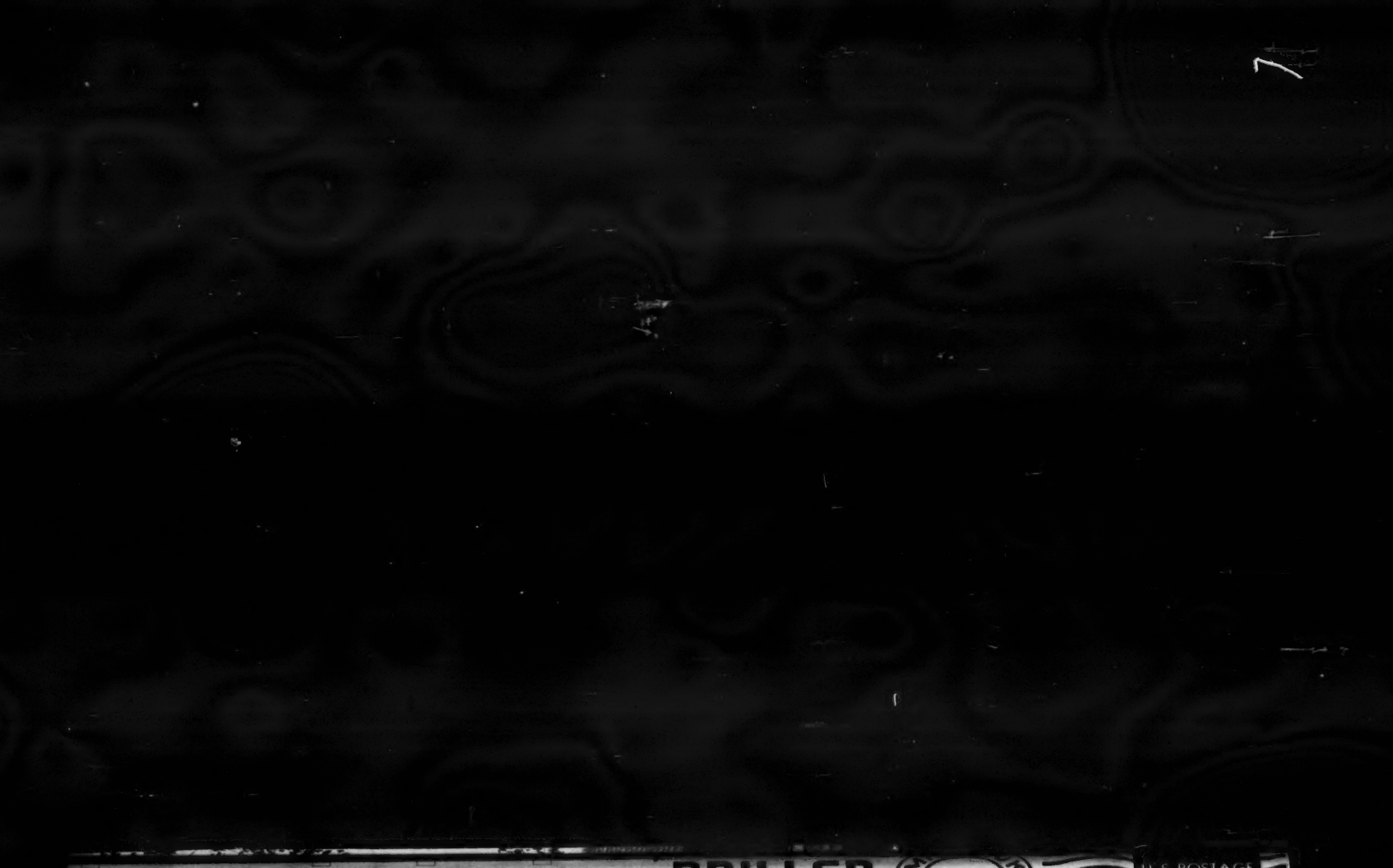
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